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(54) Security container

(57) A container comprises a lid (13) and a fastener for securing the lid, the fastener comprising a pair of barbed projections (21,21) extending from a head (20) for insertion though an aperture (31) in the lid and into an aperture (32) in the container body, which is divided into two sections by a transverse formation (30). Each barbed projection comprises an inwardly-directed barb (24) for snap-engaging with the formation (30) and an outwardly-directed barb (23) for snap-engaging with the container body adjacent is aperture (32).

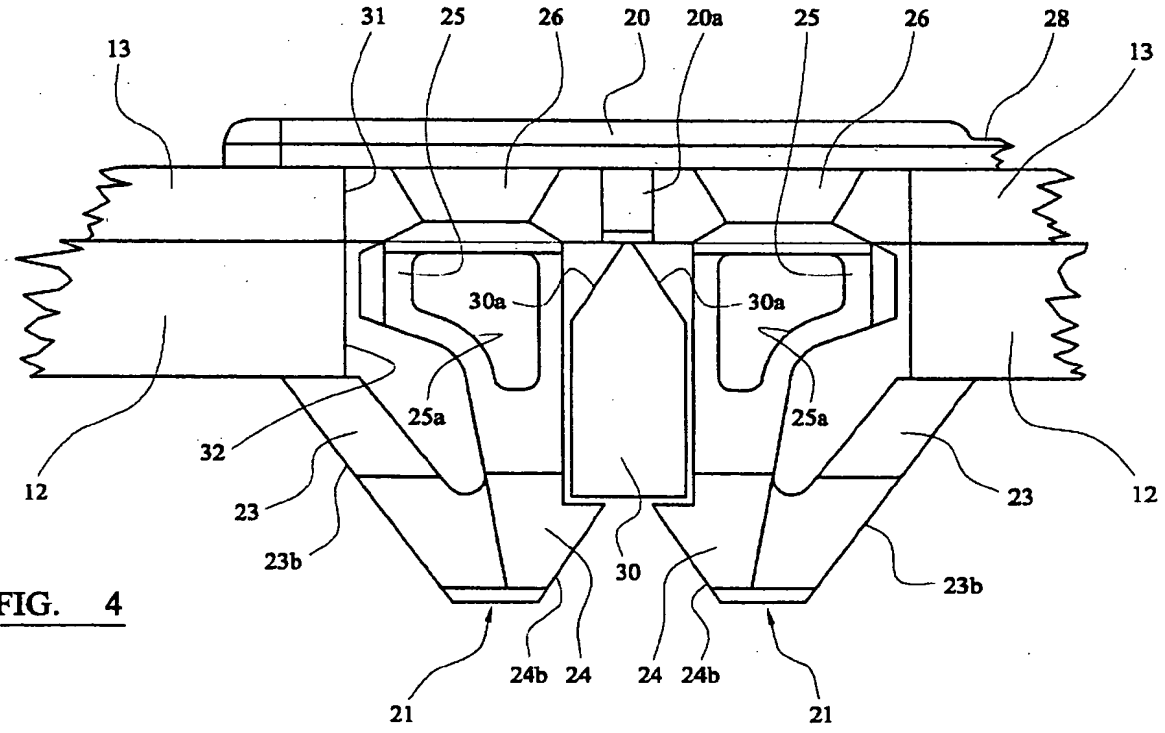

FIG. 4

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Description

[0001] This invention relates to a security container.

[0002] It is well known to ship or store articles in small plastics containers. Typically, the lid of the container is secured in place using fasteners on which a security code is printed. In use, it will be evident that the container has been opened if the security fastener is missing or broken.

[0003] One such security fastener comprises a flat head and a barbed projection extending perpendicularly from the head. In use, the projection is inserted through aligned apertures in the lid and body of the container, causing the barbs thereon to compress until they have passed fully through the apertures in the lid and container body. Once located, it is in theory impossible to remove the fastener without breaking it. However, we have found that such fasteners can be removed by lifting the lid and manoeuvring the fastener from side-to-side to disengage the barbs. In this manner, the seal can be replaced once the contents of the container have been stolen, thereby making it difficult to determine when and where the container was opened.

[0004] Another disadvantage of conventional security containers is that, because the fastener is usually fitted through an aperture in a peripheral margin of the lid to engage within an aperture in a peripheral flange of the container body, the fastener can be removed by squeezing the barbs together from the underside of the flange of the container body.

[0005] We have now devised a container which alleviates the above-mentioned problems.

[0006] In accordance with this invention, there is provided a container comprising a body having a storage compartment therein and an opening providing access to said storage compartment, a lid for closing said opening, and a fastener for securing said lid to said body of the container, said fastener comprising an enlarged head and a pair of barbed projections extending from said head for insertion through an aperture in said lid and to engage within an aperture in said body of the container, said aperture in said body being divided into two portions by a formation which locates between said barbed projections when said fastener is applied, and each of said barbed projections comprising an inwardly-directed barb for snap-engaging with said formation and an outwardly-directed barb for snap-engaging with said body adjacent said aperture.

[0007] In use, the projections located either side of the dividing formation of the aperture in the container body, making it difficult to manoeuvre the fastener from side-to-side to disengage the barbs.

[0008] Also, if an attempt is made to remove the fastener by squeezing its outwardly-directed barbs towards each other, the inwardly-directed barbs will more firmly engage the aperture-dividing formation, whilst if the two projections are forced apart to release the inwardly-directed barbs, the outwardly-directed barbs will more firmly engage the aperture in the container body: the fastener is accordingly extremely difficult to remove.

[0009] Preferably the width of the root of each projection is slightly less then the width of the aperture portion within which its fits, so that once located, the fastener cannot be moved laterally.

[0010] Preferably each projection comprises a rigid barb and a resiliently flexible barb.

[0011] Preferably the barbs on each projection comprise respective abutment surfaces which are disposed at different distances away from the head of the fastener, thereby making it even more difficult to release the barbs.

[0012] Preferably the outwardly-directed barb of each projection is directed axially of a line extending through both projections.

[0013] Preferably the outwardly-directed barb of each projection is also directed transversely of said line. Thus, in order to release the barbs, they will have to be pulled in sideways and at the same time squeezed together: this procedure is extremely difficult to perform.

[0014] Preferably the outwardly-directed barbs of the two projections are directed in opposite directions transversely of said line.

[0015] Preferably the projections are connected to the head by a frangible portion which breaks if an excessive pulling force is applied to the head of the fastener. This enables the fastener to be removed easily and also provides a tamper- evident feature.

[0016] Preferably a gripping formation such as a ring is provided on the head to make it easier to apply a pulling force to the head for removal of the fastener.

[0017] Preferably the gripping formation is attached to the head by a flexible web which allows the gripping formation to be folded into a stored position.

[0018] An embodiment of this invention will now be described by way of example only and with reference to the accompanying drawings, in which:

FIGURE 1 is a sectional view through a security container in accordance with this invention;
FIGURE 2 is an isometric view of one of the fasteners of the container of Figure 1;
FIGURE 3 is a side view of the fastener of Figure 2;
FIGURE 4 is a sectional view along the line IV-IV of Figure 1; and
FIGURE 5 is a view along the arrow V of Figure 1.

[0019] Referring to Figure 1 of the drawings, there is shown a security container comprising a plastics body 10 having a bottom wall, a pair of opposite end walls and a pair of opposite side walls, defining an internal compartment 11 for storing articles. An outwardly-directed flange 12 extends around the top of the body 10 of the container, to facilitate lifting the container, and has a downwardly-projecting rim 12a.

[0020] A plastics lid 13 is provided for closing the open top of the body 10 of the container. A peripheral margin

of the lid 13 seats on the flange 12 of the body 10 and a depending peripheral flange 14 of the lid engages over the peripheral rim 12a of the flange 12 of the container body 10.

[0021] In use, the lid 13 can be sealed to the container body 10 by inserting fasteners 15 through apertures formed in the peripheral margin of the lid 13, to engage within corresponding apertures in the flange 12 of the container body 10.

[0022] Referring to Figures 2 and 3 of the drawings, there is shown a one-piece fastener 15 of plastics material for fastening the lid 13 to the container body. The fastener 15 comprises a flat rectangular head 20, a pair of parallel projections 21 disposed in line longitudinally of the head 20 and projecting perpendicular thereto, and a ring-shaped grip 22 attached to the head 20 by means of a flexible web 28.

[0023] Each projection 21 is formed, at its outer end, with a pair of oppositely-directed barbs 23,24, the barbs 23,24 each comprising an abutment surface 23a, 24a which faces the head 20 of the fastener. The projections 21 are separated by a space 29, the barbs 24 on the projections 21 being directed inwardly into the space 29. The other barb 23 on each projection 21 is directed outwardly, axially of a line extending through both projections 21, the barbs 23 also being directed in respective opposite directions transverse to this line, as best seen in Figure 3.

[0024] Each projection 21 is formed, adjacent its root or junction with the head 30, with an outwardly-directed projection 25 which extends outwardly as far as the outer face of the barb 23, in the as-moulded condition of the fastener. The projections 21 are connected to the head 20 by means of respective frangible webs 26.

[0025] Referring to Figures 4 and 5 of the drawings, the fastener 15 is inserted through a rectangular aperture 31 in the peripheral margin of the lid 13 to engage within a corresponding aperture 32 in the flange 12 of the container body 10. The aperture 32 is divided into two sections by a transverse bridge portion 30 extending between opposite sides of the aperture, intermediate its opposite ends: the bottom of the bridge 30 projects below the underside of the flange 12 of the container body.

[0026] The top of the bridge 30 comprises oppositely-inclined surfaces 30a which are directed upwardly and away from respective opposite ends of the aperture 32. As the fastener 15 is inserted through the apertures 31, 32, the inclined outer surfaces 24b of the inwardly-directed barbs 24 abut the inclined surfaces 30a of the bridge 30, thereby causing the projections 21 to spread apart. Simultaneously, the inclined outer surfaces 23b of the outer barbs 23 abut the end surfaces of the apertures 31, 32, thereby forcing the two barbs 23 inwardly towards each other, and the inclined side surfaces 23c on the barbs 23 abut the corresponding side surfaces of the apertures 31,32 thereby forcing the barbs 23 inwardly from the opposite sides: the projections 21 are accordingly able to pass through the apertures 31, 32. Further, the projections 21 are formed with transverse openings 25a which help to permit the projects to be flexed apart.

[0027] Once the underside of the head 20 abuts the upper surface of the lid 13, the projections 21 and the barbs 23 recover their shape, so that the abutment surfaces 23a of the outwardly-directed barbs 23 locate under the flange 12 of the container body and so that the abutment surfaces 24a of the barbs 24 engage the underside of the bridge 30, which is seated tightly between the two projections. It will also be noted that the head 20 includes a projection 20a on its underside which abuts the top of the bridge 30.

[0028] In order to remove the fastener, a pulling force needs to be applied to the ring-shaped grip 22, which is sufficient to break the frangible webs 26 of the projections 21, thereby detaching the head 20 from the projections 21 of the fastener. It will be appreciated that these webs 26 will also break if an unauthorised attempt is made to remove the fastener by applying force to its head 20.

[0029] The fastener 15 is almost impossible to remove by manipulating its barbs 23,24 out of engagement with the underside of the flange 12 of the container body, since both outwardly-directed barbs 23 have to be displaced simultaneously inwardly towards each other, whilst the inwardly-directed barbs 24 have to be forced apart: it will be appreciated that the inwardly-directed barbs 24 tend to be forced further into engagement with the bridge 30 if the outwardly-directed barbs 23 are displaced towards each other, and the barbs 23 tend to be forced further into engagement with the opposite ends of the aperture 32 if the projections are forced apart to release the barbs 24.

[0030] Furthermore, it is not possible to remove the fastener by moving it transversely whilst applying an upwards pressure to the lid 13, since the bridge 30 is firmly located between the projections 21, thereby restricting the movement of the fastener within the apertures 31, 32.

[0031] It will be appreciated that a security container in accordance with this invention is thus simple in construction and yet extremely difficult for unauthorised persons to open without breaking the fastener.

Claims

1. A container comprising a body having a storage compartment therein and an opening providing access to said storage compartment, a lid for closing said opening, and a fastener for securing said lid to said body of the container, said fastener comprising an enlarged head and a pair of barbed projections extending from said head for insertion through an aperture in said lid and to engage within an aperture in said body of the container, said aperture in said body being divided into two portions by a formation

which locates between said barbed projections when said fastener is applied, and each of said barbed projections comprising an inwardly-directed barb for snap-engaging with said formation and an outwardly-directed barb for snap-engaging with said body adjacent said aperture.

2. A container as claimed in claim 1, in which each of said barbed projections includes a root portion arranged to engage within said aperture in said body so as to prevent lateral movement of said fastener.

3. A container as claimed in claim 1 or 2, in which one of said barbs of each said projection is rigid and the other barb of each said projection is resiliently flexible.

4. A container as claimed in any preceding claim, in which said barbs of each projection are formed with respective abutment surfaces disposed at different distances from said head.

5. A container as claimed in any preceding claim, in which said outwardly-directed barb of each projection is directed generally axially of a line extending through both said projections.

6. A container as claimed in claim 5, in which said outwardly-directed barb of each projection is also directed transverse to said line.

7. A container as claimed in claim 6, in which said outwardly directed barbs are directed in opposite directions transverse to said line.

8. A container as claimed in any preceding claim, in which said barbed projections are connected to said head by a frangible portion.

9. A container as claimed in any preceding claim, in which said head is provided with a formation for gripping in order to apply a pulling force.

10. A container as claimed in any preceding claim, in which said lid is formed with a peripheral flange in which said aperture therein is formed.

11. A fastener for securing a lid over an opening in a container, the fastener comprising an enlarged head and a pair of barbed projections extending from said head for insertion through an aperture in said lid and to engage within respective portions of an aperture in said container, each of said barbed projections comprising an inwardly-directed barb and an outwardly-directed barb.

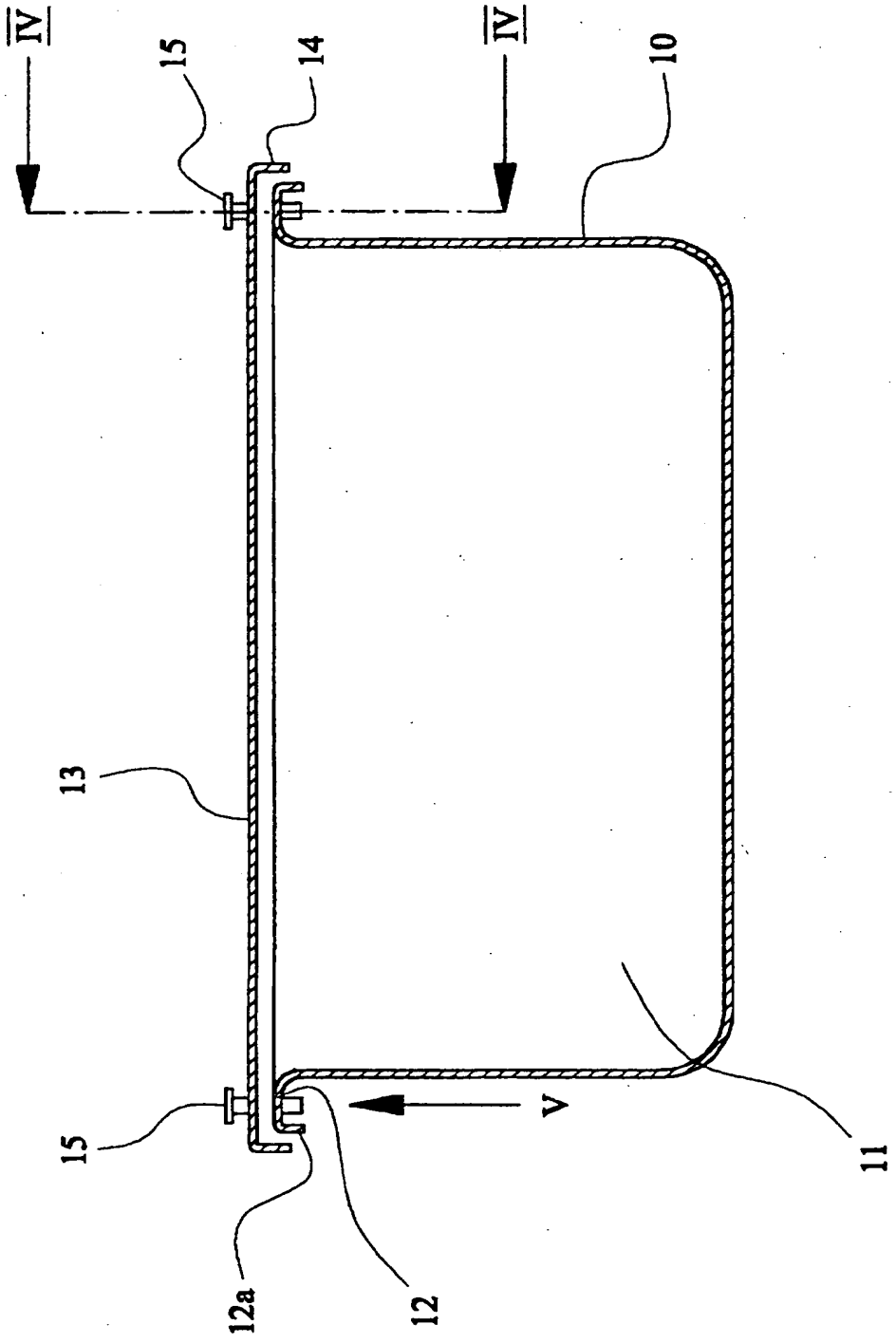

FIG. 1

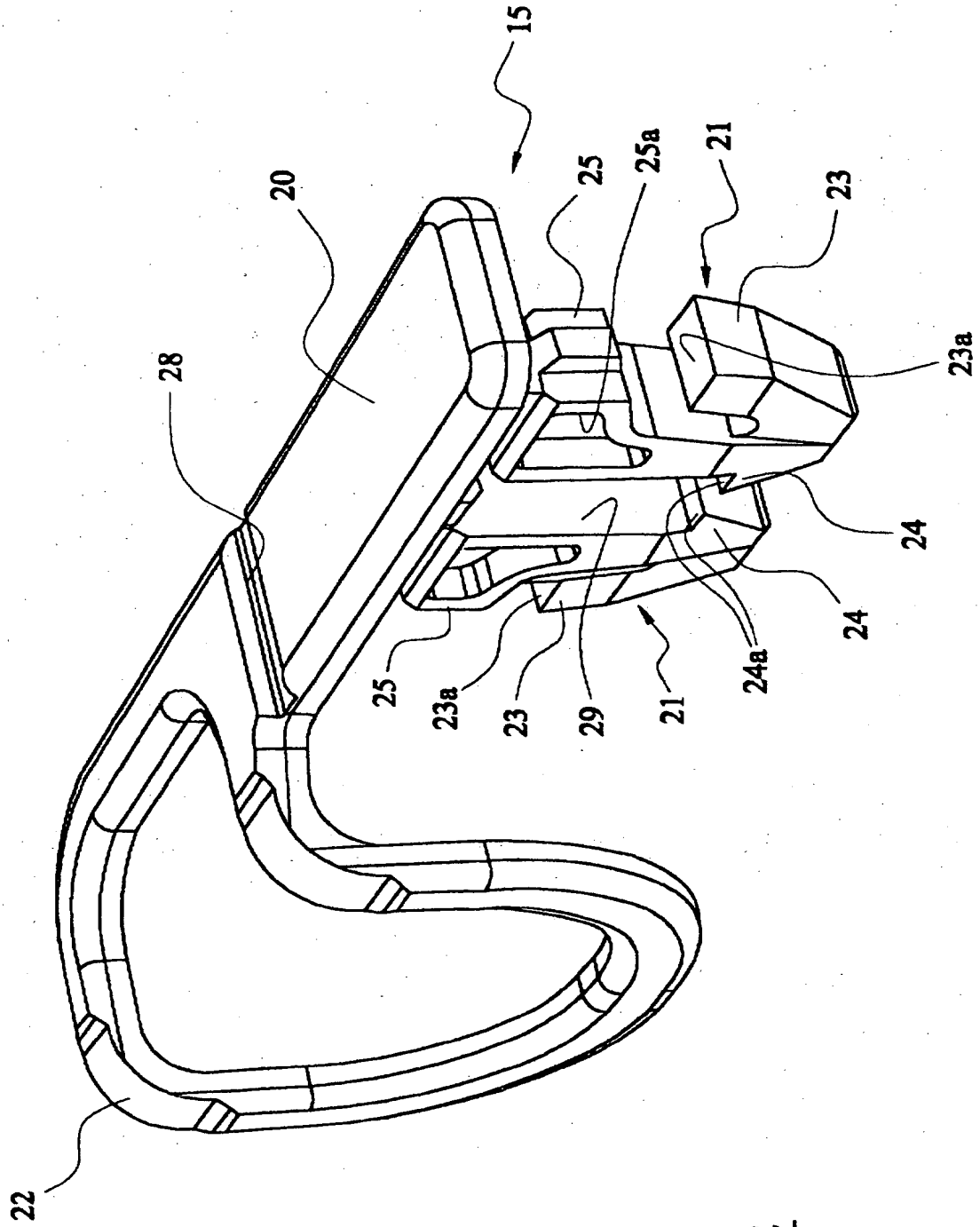

FIG. 2

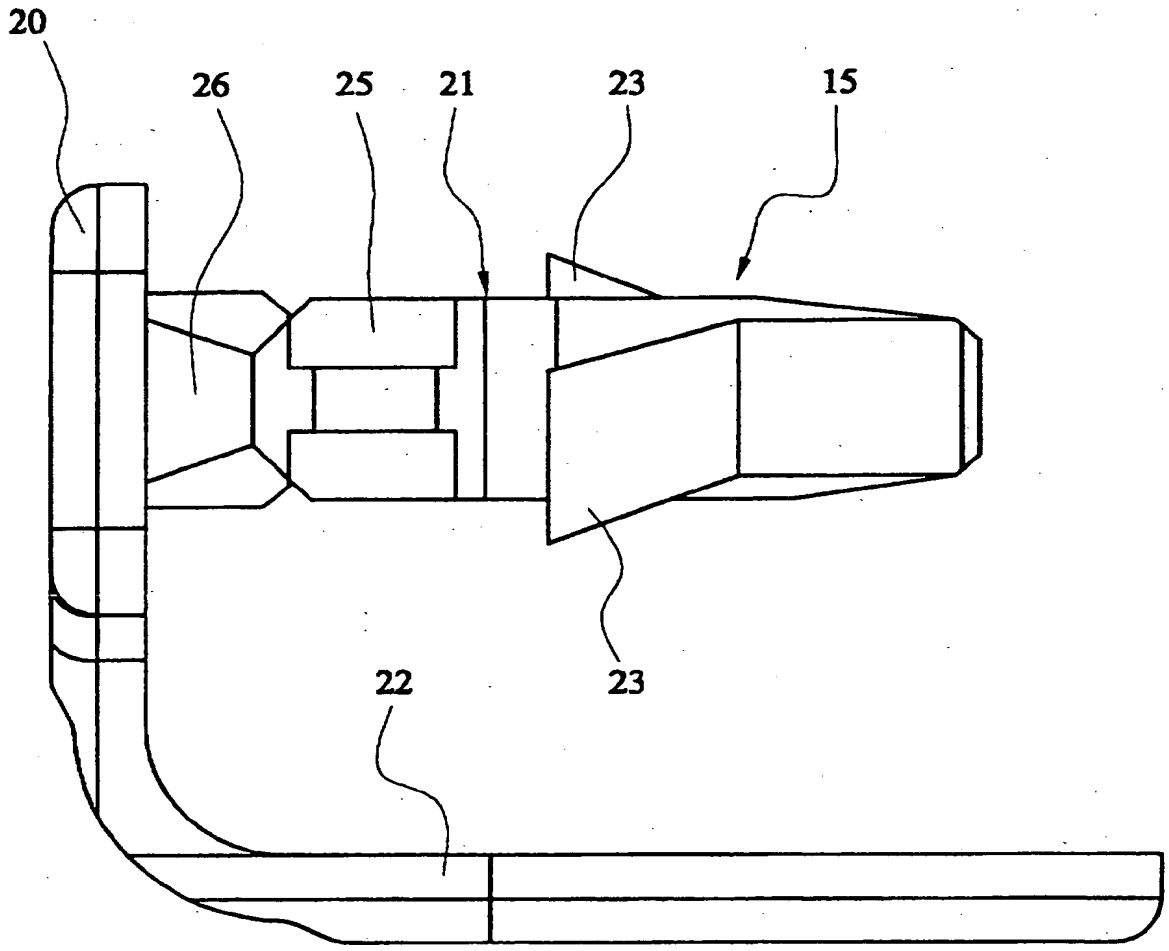

FIG. 3

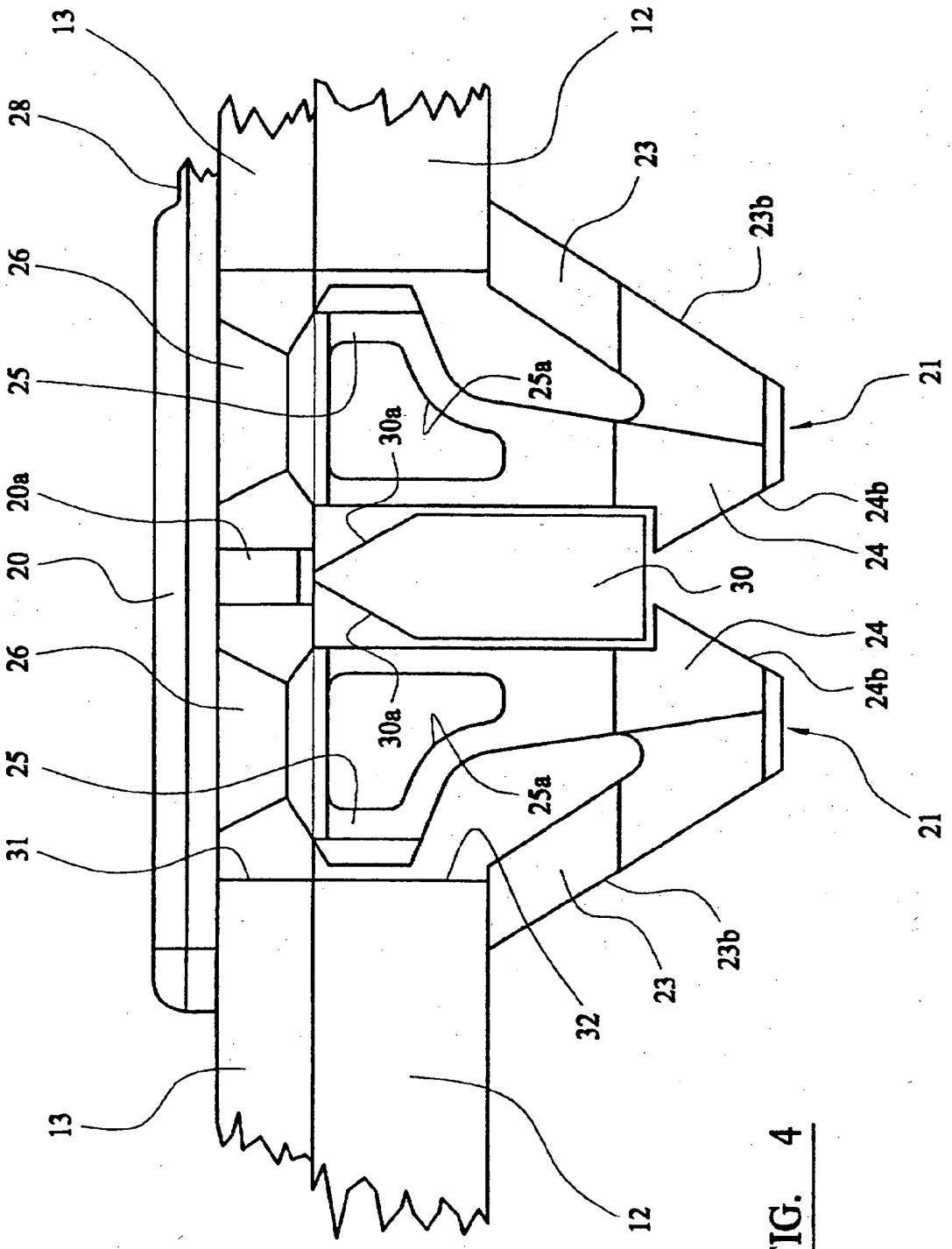

FIG. 4

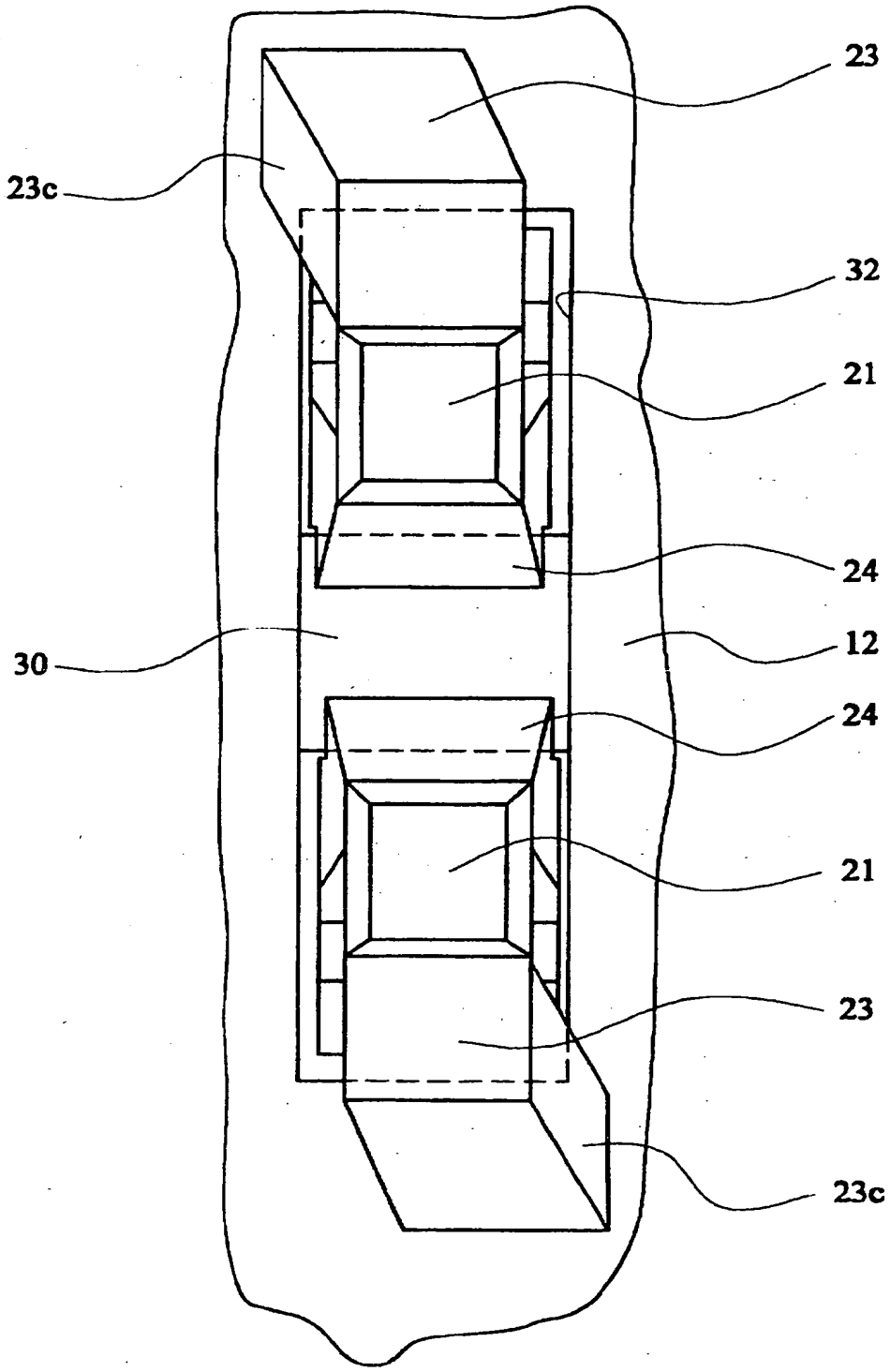

FIG. 5

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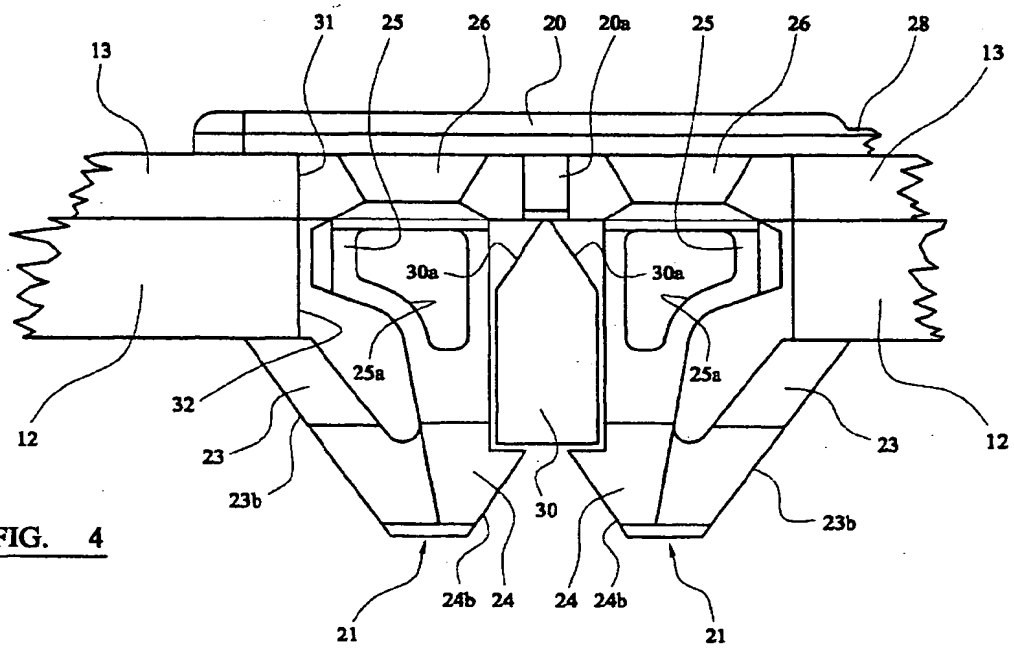

FIG. 4

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EUROPEAN SEARCH REPORT

Application Number
EP 00 30 6735

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.7)
Y	EP 0 610 904 A (TECNOWERK SRL) 17 August 1994 (1994-08-17) * the whole document *	1,11	G09F3/03 B65D55/02
Y	EP 0 454 571 A (CHEVILLOT SA SOC) 30 October 1991 (1991-10-30)	1,11	
A	* the whole document *	2-10	
A	DE 27 53 285 A (KROMSCHROEDER AG G) 31 May 1979 (1979-05-31) * page 5, paragraph 3 - page 6, paragraph 1; figure 2 *	1,11	
A	CH 476 925 A (OBRIST AG ALBERT) 15 August 1969 (1969-08-15) * the whole document *	1,11	

TECHNICAL FIELDS SEARCHED (Int.Cl.7)

G09F
B65D

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	30 January 2001	Puhl, A

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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
EP 0610904 A	17-08-1994	IT VI930018 A	10-08-1994
EP 0454571 A	30-10-1991	FR 2661537 A	31-10-1991
DE 2753285 A	31-05-1979	NONE	
CH 476925 A	15-08-1969	NONE	

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